
ENVIRONMENTAL Fact Sheet



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WB-7

1997

The Wetlands Resource

The State of New Hampshire first recognized wetlands as an important resource in 1967 when it began to regulate coastal wetlands. In 1969, the state extended its regulatory activities to cover freshwater wetlands. This fact sheet will attempt to describe the characteristics of wetlands commonly found in NH, the functions that they serve and their value to the surrounding environment.

There is a tremendous amount of diversity in the types of wetlands found in NH. There are tidal marshes, mud flats, freshwater swamps, rivers, lakes, bogs and wet meadows just to name a few. However, all wetlands share three characteristics which are used to define them. The first is **hydrology**, the presence of water. Wetlands form wherever water is present for extended periods during the growing season. Water may be present on the surface or, the soils in an area may be saturated for a sufficient period of time to develop the second characteristic of a wetland, **hydric soils**.

All soils are porous, meaning that there are small spaces between the grains of the soil. Typically soils with larger grain sizes have larger spaces through which air and water can move more freely. For example a sandy soil drains much more quickly than soils with small particles like clay. In an upland soil the spaces within the soil are usually filled by air. This allows oxygen to react with the elements within the soil. One of the "products" of these reactions is color, more specifically lighter colors such as red, tan or yellow. In a wetland soil, the spaces within the soil are filled by water for a long enough period of time to reverse the chemical reactions that can occur between oxygen and the soil's elements giving the soil a darker color such as black, bluish-gray or dark brown. Sometimes the soils may be in a transition area between wetlands and uplands or the hydrology in an area may have been recently altered, in either case a profile of the soil might show a mottled or "splotchy" pattern. Mottled soils may or may not be within wetlands, to be certain one should look for the third characteristic, **vegetation**.

The same lack of oxygen in the soil that affects soil color will affect the ability of vegetation to survive. Plants which are adapted to low oxygen, saturated soil conditions have a competitive advantage in wetlands and therefore become the most predominant species growing in that area. These types of plants are categorized as "wetlands vegetation". If greater than 50% of the plant life in a given area is wetlands vegetation then that area is considered to be wetland. Some plants have become so well adapted to wetland conditions that they can survive in no other environment. These plants are known as **indicator species** since their presence serves as an immediate indication that the area is a wetland. An example of an indicator species is the cattail which may be prevalent in saturated soils but will never grow in an upland soil.

The Benefits of Wetlands

Just as some types of wetlands are more easily recognized than others, some of the functions and benefits of wetlands may be less obvious than others. Lakes, ponds, rivers and streams are easily recognized as are the opportunities that they offer for recreation and wildlife habitat. However, they also provide flood storage, may be used as water supplies and provide sedimentation control. Swamps and marshes (both freshwater and tidal) are often easily recognized but regarded as "worthless" because they are not areas that are directly used for recreational or business pursuits. Actually these areas are extremely valuable and their removal may have immediate harmful effects on both the adjacent uplands and any nearby, more popular lakes and streams.

Marsh and swamp areas provide flood storage and wildlife habitat as well serving as a natural filtering system. The flood storage functions of marshes and swamps are fairly obvious, particularly in the spring when they store snow melt and early spring rains. Wildlife habitat is a function that is common to all natural areas. What sets marshes and swamps apart is the tremendous diversity of habitat types they provide which in turn support a wide range of wildlife. Scrub shrub areas may support a variety of birds, insects, amphibians and small mammals. Emergent vegetation such as lily pads, arrowweed, cattails and marsh grasses provide nursery habitat for many species which, while they may not be thought of as "marsh animals", could not survive without these areas. Many species of ducks nest in marsh grasses near the water's edge, young fish hide among the lily pads and arrowweed stems to avoid predators, and frogs and salamanders leave clusters of eggs in shallow water among the grasses and rushes. Emergent vegetation also makes up a large portion of the diet of moose and beaver.

The filtering functions of wetlands are the most likely to be overlooked by the casual observer. As water fans out across a wetland it slows down allowing sediments and some contaminants to settle out. Wetlands vegetation traps the sediments and their root systems help to ensure the underlying soil's stability. These plants also have some ability to remove contaminants and excess nutrients from the water. The plants and microorganisms in wetlands breakdown and recycle these materials into forms that may once again be used by larger organisms. In this way wetlands improve both water clarity and quality which is beneficial to everyone.